

**BEFORE THE
PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA**

DOCKET NOS. 2019-224-E & 2019-225-E – ORDER NO. _____

In the Matter of:)	
)	
South Carolina Energy Freedom Act)	PROPOSED ORDER OF DUKE
(House Bill 3659) Proceeding Related to)	ENERGY CAROLINAS, LLC
S.C. Code Ann. Section 58-37-40 and)	AND DUKE ENERGY
Integrated Resource Plans for Duke)	PROGRESS, LLC ACCEPTING
Energy Carolinas, LLC and Duke Energy)	MODIFIED IRPs
Progress, LLC)	

This matter comes before the Public Service Commission of South Carolina (the “Commission” or “PSC”) on the Modified 2020 Integrated Resource Plans (“Modified 2020 IRPs”) filed by Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP” and, together with DEC, the “Companies”), pursuant to and in compliance with the South Carolina Energy Freedom Act (“Act 62”), S.C. Code Ann. § 58-37-40, and Order No. 2021-447.

I. PROCEDURAL HISTORY

On June 28, 2021, the Commission issued Order No. 2021-447, which required the Companies to (1) select a preferred portfolio that the Companies believe to be the most reasonable and prudent means of meeting their respective energy and capacity needs; (2) make certain modifications to their respective 2020 Integrated Resource Plans (“2020 IRPs”); (3) engage with the Office of Regulatory Staff (“ORS”) and other interested stakeholders in preparing the Companies’ next comprehensive IRPs; and (4) incorporate certain updated modeling and analysis in their next IRP Updates and comprehensive IRPs.

The Companies filed their Modified 2020 IRPs on August 27, 2021, as directed by the Commission. The Modified 2020 IRPs are comprised of nine (9) portfolios (the “SC Supplemental Portfolios”)—A1, A2, B1, B2, C1, C2, D1, E1, and F1—that were developed with modeling assumptions similar to the corresponding original six portfolios provided in the 2020 IRPs filed September 1, 2020, except as modified in response to the Commission’s Order. The Executive Summaries of the respective Modified 2020 IRPs set forth a list indicating the specific sections of the Modified 2020 IRPs that are designed to satisfy specific requirements of Order No. 2021-447,¹ and the Companies assert that the Modified 2020 IRPs satisfied all applicable requirements and provisions of Order No. 2021-447.

On October 26, 2021, ORS, with the assistance of its consultants J. Kennedy and Associates, Inc., filed reports with the Commission, detailing ORS’s review of the DEC’s and DEP’s Modified IRPs for compliance with Order No. 2021-447 and Act 62 (separately, the “ORS DEC Report” and “ORS DEP Report”; together, the “ORS Reports”). Section 58-37-40(C)(3) requires, “[w]ithin sixty days of the electrical utility’s revised filing, the Office of Regulatory Staff shall review the electrical utility’s revised plan and submit a report to the commission assessing the sufficiency of the revised filing.” The ORS Reports found that the Companies’ Modified 2020 IRPs are “sufficient to meet the requirements set by the Commission in Order No. 2021-447.”²

¹ DEC Modified 2020 IRP, at 5; DEP Modified 2020 IRP, at 5.

² ORS DEC Report, at 20; ORS DEP Report at 20. ORS additionally identified three items that the Companies “should continue to evaluate and examine further over time[,]” including (1) the interconnection limit for \$38/MWh solar PPAs as a selectable resource; (2) natural gas forecast methodology; and (3) battery cost forecast methodology. *Id.*

Other parties filing comments related to the Companies' Modified 2020 IRPs were the South Carolina Coastal Conservation League, Southern Alliance for Clean Energy, Upstate Forever, Natural Resources Defense Council, and Sierra Club (together, the "Clean Energy Intervenors") and Vote Solar. Pursuant to S.C. Code Ann. § 58-37-40(C)(3), "[o]ther parties to the integrated resource proceeding may also submit comments." The Clean Energy Intervenors and Vote Solar were intervening parties in the initial 2020 IRP proceedings and filed comments related to the Modified IRPs on October 26, 2021. Unlike ORS, however, the Clean Energy Intervenors and Vote Solar recommended that the Commission reject the Companies' Modified 2020 IRPs, as filed, and require the Companies to incorporate additional modifications to their Modified 2020 IRPs. On November 23, 2021, the Companies filed Reply Comments advocating for Commission acceptance of their Modified 2020 IRPs.

II. STANDARD OF PROOF AND STATUTORY FRAMEWORK

The Commission is required to adjudicate the matters arising in contested cases using the preponderance of evidence standard.³ The legal framework of the immediate proceeding after the rejection or modification of an electrical utility's IRP, is codified as enacted in South Carolina Act 62:

If the commission modifies or rejects an electrical utility's integrated resource plan, the electrical utility, within sixty days after the date of the final order, shall submit a revised plan addressing concerns identified by the commission and incorporating commission-mandated revisions to the integrated resource plan to the commission for approval. Within sixty days of the electrical utility's revised filing, the Office of Regulatory Staff shall review the electrical utility's

³ S.C. Code Ann. Section 1-23-600 (A)(5) ("Unless otherwise provided by statute, the standard of proof in a contested case is by a preponderance of the evidence.")

revised plan and submit a report to the commission assessing the sufficiency of the revised filing. Other parties to the integrated resource plan proceeding also may submit comments. No later than sixty days after the Office of Regulatory Staff report is filed with the commission, the commission at its discretion may determine whether to accept the revised integrated resource plan or to mandate further remedies that the commission deems appropriate.

S.C. Code Ann. § 58-37-50 (C)(3) (Supp. 2020).

III. ELEMENTS FOR SATISFACTION AND MODIFICATION IN DEP’S AND DEC’S MODIFIED 2020 IRPs

Commission Order No. 2021-447 concluded that “a utility’s plan must indicate which portfolio it intends to pursue.”⁴ Because neither DEC nor DEP identified a preferred portfolio in their original 2020 IRPs, the Commission found that the 2020 IRPs were deficient and ordered the Companies to “modify their 2020 IRPs to identify a preferred portfolio”⁵ after incorporating certain Commission-directed modeling assumptions. In particular, Order No. 2021-447 directed that DEP and DEC shall address the following in their Modified 2020 IRPs:

- 1) Prepare additional load forecast scenarios, such as high and low scenarios that account for economic and other types of uncertainty;
- 2) Remodel their portfolios using natural gas pricing forecasts that rely on market prices for eighteen months before transitioning over eighteen months to the average of at least two fundamentals-based forecasts;
- 3) Include third-party solar PPAs priced at \$38/MWh as a selectable resource assuming a contract term of at least 20 years and operational characteristics identical to CPRE projects;
- 4) Include sensitivities for PPA pricing at \$36/MWh and \$40/MWh;
- 5) Account for the effect of the December 2020 federal investment tax credit (“ITC”) extension on solar development;

⁴ Order No. 2021-447, at 85.

⁵ *Id.*

- 6) Adjust modeling to take into account the increasing market saturation of single-axis tracking solar systems in the DEC and DEP territories;
- 7) Use the NREL ATB Low figures for battery storage costs;
- 8) Assume a 750 MW annual limitation on the interconnection of solar and storage resources; and
- 9) Select a preferred resource portfolio in their respective Modified 2020 IRPs.

DEC and DEP addressed each of these requirements in their respective Modified 2020 IRPs and, after doing so, each selected Portfolio C1 as their respective preferred portfolio for resource planning purposes at this time. Each action item identified in the Companies' filings was evaluated for sufficiency by ORS, and many elements received comments from intervenors.

IV. FINDINGS OF FACT

After consideration of the Companies' Modified 2020 IRPs, the ORS Reports, and comments from intervenors filed in these dockets, the Commission hereby makes the following findings of fact concerning DEC's and DEP's compliance with the above required nine (9) elements including selection of a preferred portfolio, that are also supported by the evidence in the record as detailed in Order No. 2021-447 and as discussed below:

A. **Element 1: Prepare Additional Load Forecast Scenarios**

The Companies have developed alternative load forecast sensitivities, accounting for economic and other types of uncertainty over the IRP planning horizon, including long-term forecasts of the utility's sales and peak load forecasts using high and low scenarios that consider the uncertainty in economic conditions and other factors.⁶ The Companies

⁶ DEC Modified 2020 IRP, at 38–41; DEP Modified 2020 IRP, at 37–40.

adjusted the load forecast for base case economic projections over the entire 15-year forecast terms. The high forecast case scenario was developed by incrementing the growth rate in the economic drivers by 0.3% and the low case forecast was developed by decrementing the base case growth rate of these economic drivers by the same 0.3%.⁷ The high and low case scenarios reflect a significant change in the 15-year compounded growth rates compared to the base case projections.⁸

The Companies performed the high and low economic load forecast scenarios as sensitivities to Portfolios B1 and B2 (base cases with carbon policy). In addition, the Modified 2020 IRPs explain that the Companies will evaluate the level of uncertainty to be consistent with the Companies' Resource Adequacy study in future IRPs. Based on its review, ORS "determined that the Compan[ies] sufficiently met the requirement of the Commission's Order."⁹ No intervenor challenged the Companies' updated approach to load forecasts presented in the 2020 Modified IRPs.

Accordingly, the Commission finds that these actions satisfy the respective requirements of Commission Order No. 2021-447.

B. Element 2: Modify Natural Gas Price Forecasts

As detailed in DEC's and DEP's respective Modified 2020 IRPs, Portfolios A2, B2, and C2 utilize the modified natural gas price forecast methodology articulated by the Commission—relying upon 18 months of market prices before transitioning over the following 18 months to the average of two fundamentals-based forecasts—in the

⁷ ORS DEC Report, at 11–12; ORS DEP Report, at 11–12.

⁸ DEC Modified 2020 IRP, at 39–41; DEP Modified 2020 IRP, at 38–40.

⁹ ORS DEC Report, at 11–12; ORS DEP Report, at 11–12.

development of these resource portfolios.¹⁰ Addressing this approach, ORS found that the Companies “revised [their] gas price forecasting assumptions and sufficiently complied with the Commission’s requirements.”¹¹ The Clean Energy Intervenors and Vote Solar, on the other hand, assert that the Companies failed to comply with the Commission’s Order by choosing not to also develop Portfolios D2, E2, and F2, arguing that the Companies should have incorporated the modified natural gas price forecast methodology for each and every SC Supplemental Portfolio.¹²

In response, the Companies explained that Portfolios D1, E1, and F1 rely on emerging technologies that may not be commercially available or economic within the resource planning window, making them more theoretical or illustrative in nature and undesirable candidates for a preferred plan.¹³ Additionally, the Companies explained that Portfolios D1, E1, and F1 were never intended to be optimized with input parameters given their outcome-oriented nature, *i.e.* they were intended to illustrate the impacts of reliance on specific maturing technologies—such as offshore wind energy (D1 and F1) and small modular nuclear reactors (E1 and F1)—on the system.

The Commission is persuaded by the Companies’ explanation and ORS’s endorsement of the Companies’ approach that the Companies have, by a preponderance of the record, satisfied the respective requirement of Commission Order No. 2021-447.

¹⁰ DEC Modified 2020 IRP, at 7; DEP Modified 2020 IRP, at 6–7.

¹¹ ORS DEC Report, at 14; ORS DEP Report, at 14.

¹² Clean Energy Intervenors Comments, at 8–11; Vote Solar Comments, at 6–8, 11.

¹³ DEC/DEP Reply Comments, at 10.

C. **Elements 3 and 4: Include Third-Party Solar PPAs as a Selectable Resource**

Pursuant to the directive in Order No. 2021-447, the Companies have modified all nine (9) portfolios to include \$38/MWh third-party solar PPAs as a selectable resource option.¹⁴ The Companies have allocated 50% of the 750 MW solar interconnection limit to both utility cost-of-service solar and \$38/MWh third-party PPA solar.¹⁵ The Companies based the 50% allocation to cost-of-service and third-party solar on the uncertainty of the volume of solar PPAs that would be available on an annual basis due to factors such as increased procurement bid prices.¹⁶

The Clean Energy Intervenors and Vote Solar argue that the Companies' restriction of the quantity of third-party PPAs that could be selected to 50% of the 750 MW interconnection limit was unjustified, as opposed to relying exclusively on third-party PPAs.¹⁷ The Clean Energy Intervenors also criticized the Companies for including in the Modified 2020 IRPs undesignated resources that were included in the original 2020 IRPs.¹⁸

In response, the Companies explained that the allocation of available third-party PPAs is based on their historical experience procuring solar at this price. Over the past four years, the Companies stated that they have procured—through the North Carolina Competitive Procurement for Renewable Energy program—approximately 600 MW of solar at approximately \$38/MWh (or lower) out of a total volume procured of 1,185 MW. Furthermore, the 600 MW of solar procured at or below \$38/MWh represents only 10% of

¹⁴ DEC Modified 2020 IRP, at 25–27; DEP Modified 2020 IRP, at 26.

¹⁵ DEC Modified 2020 IRP, at 27; DEP Modified 2020 IRP, at 26.

¹⁶ DEC Modified 2020 IRP, at 26–27; DEP Modified 2020 IRP, at 25–26.

¹⁷ Clean Energy Intervenor Comments, at 11–15.

¹⁸ *Id.*; DEC Modified 2020 IRP, at 33.

the total 6,115 MW of solar projects that were bid into CPRE Tranches 1 and 2. In addition to their historical experience, the Companies noted that other factors such as increasing land costs, supply chain and raw materials constraints exacerbated by the recent COVID-19 pandemic, and increasing labor costs are putting upward pressure on solar costs which may reduce the availability of \$38/MWh PPAs even further. Based on this information, the Companies argue it is reasonable to assume, for resource planning purposes, that the Companies could procure 375 MW of solar at \$38/MWh each year over the next 15 years.

The Companies also identified that there is a growing trend across the country for utilities to select a mix of utility-owned cost-of-service solar resources and market-priced solar resources. Planning for a mix of cost-based and market-based resources reduces utility customers' exposure to market prices volatility at the end of the fixed contract period relative to a portfolio that is all market-based. In addition, utility commissions exercise greater financial control and regulatory oversight over utility-owned assets than non-utility-owned assets, and commissions are better able to ensure such utility-owned assets are operating effectively to the benefit of customers over their entire operating life cycle. Unlike the utility's revenue requirement, third-party contracts cannot be modified or directed by the Commission, and any commercial dispute must be litigated in civil court, which is a time-consuming and expensive process. Further, such issue resolution—over important resources that are critical to ensuring continuous service reliability—is not conducted under or subject to the Commission's regulatory oversight. For these reasons, the Companies explained that utility-owned projects act as a hedge to the fluctuating value of solar PPAs and can limit the risk to customers because utility-owned asset costs are known over the life of the asset and decline each year as the asset depreciates.

Last, the Companies explained that their inclusion of “undesigned” solar resources in the Modified 2020 IRPs had only a negligible impact on the volume of solar included in the preferred portfolio and, therefore, does not provide strong grounds for rejecting the Modified IRPs, as filed.

ORS was supportive of the Companies’ approach, noting that “[a]fter review of the Commission requirements, DEP’s Modified IRP, and the Compan[ies’] reason for limiting solar PPAs, ORS concludes that [the Companies] complied with the Order.”¹⁹

The Commission is persuaded by the Companies’ explanation of their decision to limit selectable PPAs to half of the 750 MW limit and, accordingly, finds that these actions satisfy the respective requirement of Commission Order No. 2021-447. The Commission will continue to review the reasonableness of this resource planning decision in future proceedings on the Companies’ IRPs.

D. Element 5: Account for the Effect of the December 2020 ITC Extension

In December 2020, the United States Congress passed legislation extending the federal investment tax credit for an additional two years and implementing a 10% tax credit thereafter. The Companies have incorporated the two-year ITC extension in modeling for all nine of the Companies’ SC Supplemental Portfolios.²⁰ In light of the rapidly evolving legislative activity on tax credits for renewable energy technologies, the Companies stated that they will monitor these developments and incorporate the most current policies in developing future IRPs.²¹

¹⁹ ORS DEC Report, at 17; ORS DEP Report, at 17.

²⁰ DEC Modified 2020 IRP, at 25; DEP Modified 2020 IRP, at 24.

²¹ *Id.*

Both the Clean Energy Intervenors and ORS agreed that the Companies satisfied the Commission’s directive to update their solar ITC assumptions to reflect the extension..²² ORS additionally found reasonable the Companies’ assumption that “safe harbor” provisions are taken advantage of and lock in benefits for up to four years, noting that the assumption is in the best interest of the customers.²³ Accordingly, the Commission finds that these actions and the Modified 2020 IRPs satisfy the respective requirement of Commission Order No. 2021-447.

E. Element 6: Account for Increasing Market Saturation of Single-Axis Tracking Solar

The Companies have adjusted their modeling in all Supplemental Portfolios to reflect the results of CPRE Tranche 2, which indicate that new solar resources are most likely to be developed as single-axis tracking.²⁴ As detailed by ORS, updating the solar ELCC values to reflect the change to single-axis tracking is not a simple matter and the Companies will need to continue to study and refine their estimates of the capacity value of solar in future IRPs. ORS recognized that the Companies have committed to updating the solar ELCC studies in their next comprehensive IRPs, which will provide more detailed analysis of solar resources capacity values at different penetration levels.²⁵ To date, the Companies have updated the ELCC values to reflect 100% single-axis tracking, which assigns greater capacity value to future solar resources in the modeling analysis. As evidenced by Table 2-A and Table 3-AA in the respective Modified IRPs filings, the Companies have modeled all future solar resources as single-axis tracking and assumed

²² Clean Energy Intervenor Comments, at 9; ORS DEC Report, at 20; ORS DEP Report, at 20.

²³ ORS DEC Report, at 17; ORS DEP Report, at 17.

²⁴ DEC Modified 2020 IRP, at 27; DEP Modified 2020 IRP, at 26.

²⁵ ORS DEC Report, at 14–15; ORS DEP Report, at 14–15.

winter capacity values between 2% and 1.1% in DEC and between 3.2% and 2.7% in DEP, declining as solar penetration rises.²⁶

The Clean Energy Intervenors commented that all nine of the SC Supplemental Portfolios increased the share of single tracking systems to 100%, thereby satisfying the Commission’s directive in Order No. 2021-447.²⁷ ORS likewise found that the Companies’ modeling of projected solar as 100% single axis tracking satisfies the Commission’s requirement that the Companies should adjust the mix of single-axis tracking solar resources in the Modified IRPs to assume 100% single-axis tracking and should adjust the mix of single-axis tracking solar resources in PURPA projects.²⁸

For all of these reasons, the Commission finds that the Modified 2020 IRPs satisfy the respective requirement of Commission Order No. 2021-447.

F. Element 7: Use the NREL ATB Low Figures for Battery Storage Costs

As detailed in DEC’s and DEP’s respective 2020 Modified IRPs, Portfolios A2, B2, and C2 utilize the NREL ATB low battery storage cost estimates in the development of these portfolios.²⁹ Addressing this approach, ORS found that the Companies “met the requirements of the commission’s order to model battery price forecasts using the NREL ATB Low forecast[.]”³⁰ The Clean Energy Intervenors and Vote Solar, on the other hand, asserted that the Companies failed to fully comply with the Commission’s Order by choosing not to also develop Portfolios D2, E2, and F2 and argued that the Companies

²⁶ DEC Modified 2020 IRP, at 24–25, 108–11; DEP Modified 2020 IRP, at 23–24, 107–10.

²⁷ Clean Energy Intervenor Comments, at 6.

²⁸ ORS DEC Report, at 14–15; ORS DEP Report, at 14–15.

²⁹ DEC Modified 2020 IRP, at 7; DEP Modified 2020 IRP, at 8.

³⁰ ORS DEC Report, at 18; ORS DEP Report, at 18.

should have incorporated the NREL ATB low battery storage cost estimates for each and every SC Supplemental Portfolio.³¹

In response, and as already addressed *supra* Section IV.2, the Companies explained that Portfolios D1, E1, and F1 rely on emerging technologies that may not be commercially available or economic within the resource planning window, making them more theoretical or illustrative in nature and undesirable candidates for the preferred plan.³² Additionally, Portfolios D1, E1, and F1 were never intended to be optimized with input parameters given their outcome-oriented nature, *i.e.* they were intended to illustrate the impacts of specific resources on the system.

The Commission is persuaded by the Companies' explanation and ORS's endorsement of the Companies' approach. Accordingly, the Commission finds that these actions satisfy the respective requirement of Commission Order No. 2021-447.

G. Element 8: Assume a 750 MW Interconnection Limit

In their original 2020 IRPs, the Companies' modeling included a collective 500 MW annual interconnection constraint on the volume of new solar resources that could be added in a single year in the Companies' base case planning assumptions portfolios. The Commission ordered the Companies to modify these modeling assumptions to include an annual interconnection limitation of 750 MW for base case planning assumptions. Accordingly, the Companies applied a 750 MW interconnection limit to Portfolios A1, A2, B1, B2, C1, and C2 in their Modified 2020 IRPs. The annual interconnection limit in Portfolios D1, E1, and F1 was increased to 900 MW in the Modified IRPs. After review,

³¹ Clean Energy Intervenor Comments, at 8-11; Vote Solar Comments at 6-8.

³² DEC/DEP Reply Comments, at 10.

ORS found that “the Compan[ies have] sufficiently met the Commission’s requirement to increase the annual solar interconnection limit to 750 MW in this Modified IRP.”³³ No intervenor commented on the Companies’ increase to the annual solar interconnection limit except as discussed in Section IV.C above.

Accordingly, the Commission finds that these actions satisfy the respective requirement of Commission Order No. 2021-447.

H. Selection of a Preferred Plan

The Companies have each selected Portfolio C1 as “the most reasonable and prudent plan” at this time, in compliance with Order No. 2021-447.³⁴ According to the Executive Summary in their Modified IRPs, the Companies believe that the “most reasonable and prudent plan” should ensure affordability and reliable service for customers, while also prioritizing the retirement of DEC’s and DEP’s existing coal fleet. Planning for earliest practicable coal retirements and transitioning the Companies’ generation fleet has become increasingly important given the likelihood of more stringent environmental regulations, the growing potential for carbon policy, and the ongoing constraints on coal supply. The Modified 2020 IRPs explain that Portfolio C1 is the best representation among the Companies’ SC Supplemental Portfolios of how to achieve these goals using proven technologies that are economic and available today.³⁵ ORS found that the “Compan[ies] sufficiently met the Commission’s requirement to select a preferred resource plan in the Modified IRP.”³⁶

³³ ORS DEC Report, at 15; ORS DEP Report, at 15.

³⁴ DEC Modified 2020 IRP, at 13; DEP Modified 2020 IRP, at 13.

³⁵ *Id.*

³⁶ ORS DEC Report, at 10–11; ORS DEP Report, at 10–11.

The Clean Energy Intervenors and Vote Solar took issue with the Companies' selection of Portfolio C1 as their preferred portfolio because it does not incorporate the natural gas and battery storage modifications identified in Order No. 2021-447. The Clean Energy Intervenors argued that the Commission should not accept Portfolio C1 as the preferred plan,³⁷ and Vote Solar similarly suggested that the Companies should not select a preferred portfolio that does not implement all of the Commission's required modifications.³⁸

In response, the Companies explained that the Commission-directed modifications for fuel and battery storage costs were better suited as a sensitivity or scenario analysis rather than a base case planning assumption.³⁹ By incorporating the Commission-directed modifications for fuel and battery storage costs into their A2, B2, and C2 Portfolios, the Companies explained, they were able to robustly evaluate the impact of those cost sensitivities as compared to their A1, B1, and C1 Portfolios in compliance with Order No. 2021-447 and in keeping with Act 62's directive to evaluate "low, medium, and high cases for the adoption of renewable energy" and conduct "sensitivity analyses related to fuel costs, environmental regulations, and other uncertainties and risks[.]"⁴⁰ As a result of this analysis, the Companies have proposed Portfolio C1 as responsive to the Commission's directive to select a preferred portfolio and representing the Companies' most reasonable and prudent resource plan as of this 2020 IRP snapshot in time. The Companies also highlighted the importance of ensuring that the Companies' management, resource

³⁷ Clean Energy Intervenors Comments, at 8–11.

³⁸ Vote Solar Comments, at 11, 26.

³⁹ DEC/DEP Reply Comments, at 15.

⁴⁰ S.C. Code Ann. §§ 58-37-40(B)(1)(e), (B)(1)(e)(iii).

planning experts, and system operators have the ability to effectively plan and operate their systems to provide reliable electric service to their customers—subject to Commission oversight—and to present portfolios to the Commission that the Companies determine are the most reasonable and prudent portfolios of resources to meet customers’ future energy needs.⁴¹

Importantly, no intervenor challenged the accelerated carbon reductions contemplated by Portfolio C1 or otherwise suggested that any other SC Supplemental Portfolio would be more appropriate as the most reasonable and prudent plan. As explained in the Executive Summary of the Companies’ respective Modified 2020 IRPs, the inclusion of carbon policy in Portfolios B1/B2 drives significant additional renewable energy, including an increase in solar of approximately 44% when compared to Portfolios A1/A2. Portfolio C1 shows renewable energy additions similar to Portfolios B1/B2, but achieves more immediate carbon reductions—66% by 2030 compared to 2005 baseline levels—driven by accelerated retirement of coal generation enabled by addition of efficient, flexible natural gas and high penetrations of solar energy.⁴²

The Companies’ Modified 2020 IRPs also identified that the Companies’ preferred Portfolio C1 as well as Portfolios A1/A2, B1/B2, and C2 all rely on new natural gas to support the retirement of coal generation and the integration of greater volumes of intermittent solar generation. Additionally, no intervenor challenged the Companies’ assertion that Portfolios D1, E1, and F1 are heavily reliant on emerging technologies that may not be commercially available or economic within the resource planning window.⁴³

⁴¹ DEC/DEP Reply Comments, at 16.

⁴² DEC Modified 2020 IRP, at 12; DEP Modified 2020 IRP, at 12.

⁴³ DEC/DEP Reply Comments, at 18.

ORS, the Clean Energy Intervenors, and Vote Solar each also raised as a concern the Companies' statement that its selection of Portfolio C1 as the preferred plan was "limited to fulfilling the specific directive to identify the most reasonable and prudent means for meeting the Compan[ies'] long-term energy and capacity needs and such selection is not intended to dictate its use as the appropriate plan for all other legal and regulatory purposes that integrated resource planning serves."⁴⁴ To address these concerns, the Companies agreed, in their Reply Comments, that Portfolio C1 should be used as the base planning assumption for other legal and regulatory proceedings before the Commission. The Companies further agreed with ORS that if changes in assumptions or circumstances occur, those can be considered as adjustments to the preferred portfolio at the time of the future proceeding. In particular, the Companies agreed with ORS that in future avoided cost proceedings, the Companies should use their preferred portfolio but should adjust the preferred portfolio to exclude the explicit cost of carbon as it did in the sensitivity analysis presented in the Modified IRPs.⁴⁵

Accordingly, the Commission finds that these actions satisfy the Commission's directive in Order No. 2021-447 for DEC and DEP to select a preferred plan in order to meet the requirements of Act 62. Consistent with ORS's recommendation and the Companies' commitment in their Reply Comments, the Companies' preferred plan, Portfolio C1, should presumptively be used for all other legal and regulatory purposes that integrated resource planning serves in South Carolina and any adjustments to Portfolio C1 should be transparently identified to the Commission in future filings. The Commission

⁴⁴ DEC Modified 2020 IRP, at 23; DEP Modified 2020 IRP, at 22.

⁴⁵ DEC/DEP Reply Comments, at 18.

further addresses its conclusions of law regarding the Companies' preferred plan in Section V below.

V. CONCLUSIONS OF LAW

Under the statutory provisions of Act 62, this Commission required modification of DEC's and DEP's 2020 IRPs in Order No. 2021-447. In the current matter of addressing the Companies' Modified 2020 IRPs, S.C. Code Ann. § 58-37-40 (C)(3) states: "the commission at its discretion may determine whether to accept the revised integrated resource plan or to mandate further remedies that the commission deems appropriate." The Commission, in consideration of all of its Findings related to Elements 1-8, concludes that the Companies' Modified 2020 IRPs address all statutory requirements and the deficiencies identified by this Commission in Order No. 2021-447, which necessitated the Companies file Modified 2020 IRPs in this proceeding. The Modified 2020 IRPs are therefore approved.

The statutory provisions of S.C. Code Ann. § 58-37-40(C)(2) state: "The commission shall approve an electrical utility's integrated resource plan if the commission determines that the proposed integrated resource plan represents the most reasonable and prudent means of meeting the electrical utility's energy and capacity needs as of the time the plan is reviewed." As identified above, in Order No. 2021-447, the Commission found that the 2020 IRPs were deficient under Act 62 because DEC and DEP had not selected a preferred plan and ordered the Companies to "modify their 2020 IRPs to identify a

preferred portfolio”⁴⁶ after incorporating certain Commission-directed modeling assumptions.

The Commission, in its evaluation of the specific “most reasonable and prudent” plan notes that the Companies assert,

After completing the significant work to develop the SC Supplemental Portfolios and Analysis, as required by the Order, [the Companies] selected SC Supplemental Portfolio C1 as the most reasonable and prudent plan for resource planning purposes at this time. . . . SC Supplemental Portfolio C1 also balances . . . carbon reduction plans with ensuring power supply reliability and customer affordability by leveraging existing infrastructure to facilitate the generation transition.⁴⁷

The Commission also notes that ORS did not object to the selection of Portfolio C1 as the most reasonable and prudent plan, and no intervenor suggested another of the SC Supplemental Portfolios would be more appropriate as the preferred plan at this time.

In addition to the conclusions explained and stated previously herein, the Commission concludes, pursuant to S.C. Code Ann. § 58-37-40(C)(2), that SC Supplemental Portfolio C1 be approved as DEC’s and DEP’s preferred resource plan. The Commission further concludes that the modeled SC Supplemental Portfolio C1 represents the most reasonable and prudent means of meeting the electrical utility’s energy and capacity needs as of the time the plan is reviewed under Act 62.

While the conclusions of this Commission determine that the Companies have satisfied the statutory requirements and addressed Commission-directed modifications for this proceeding with their Modified 2020 IRPs, the Commission expects there will be

⁴⁶ Order No. 2021-447, at 85.

⁴⁷ DEC/DEP August 27, 2021 Filing Letter, at 2–3.

further refinements to the IRPs and preferred plan as the Companies update inputs and incorporate other Commission-directed modifications in their IRP updates and next comprehensive IRPs.

VI. ORDERING PROVISIONS

1. DEC's and DEP's Modified 2020 IRPs are approved.
2. In developing their next comprehensive IRPs, DEC and DEP are directed to evaluate the appropriate volume of \$38/MWh solar PPAs as a selectable resource option in developing their next comprehensive IRPs.
3. In developing their next comprehensive IRPs, DEC and DEP are directed to continue to evaluate the use of their original natural gas forecast base planning assumption, rather than the modified natural gas forecast approved in Order No. 2021-447, in their preferred plans in developing their next comprehensive IRPs.
4. In developing their next comprehensive IRPs, DEC and DEP should continue to evaluate the appropriate battery storage cost forecasts and address whether the NREL ATB Low battery forecast is appropriate for developing the Companies' next comprehensive IRPs and for inclusion in the Companies' preferred plans.
5. All aspects of Order No. 2021-447, not inconsistent with this Order, are still in effect, including but not limited to, the Commission's mandate for further modifications to be included in the IRP Update and next comprehensive IRPs.
6. Pursuant to South Carolina Code Ann. § 58-37-40(C)(4), the Commission's findings, conclusions, and Order in this docket shall not be determinative of the reasonableness or prudence of the acquisition, replacement, or construction and any new resources or the making of any expenditure by DEC or DEP.

DOCKET NOS. 2019-224-E & 2019-225-E – ORDER NO. _____
DECEMBER _____, 2021
PAGE 21

7. DEC and DEP shall file their next annual IRP Updates no later than sixty (60) days following the Commission's final Order approving the Companies' Modified IRPs.

8. This Order shall remain in full force and effect until further Order of this Commission.

BY ORDER OF THE COMMISSION:

Justin T. Williams, Chairman

ATTEST:

Jocelyn Boyd, Chief Clerk/Executive Director